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10978 U.S. PTO

09/992227



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application Of: Gan et al.

For: Powder Process For Double Current Collector
Screen Cathode Preparation

the specification of which is being transmitted herewith.

Assistant Commissioner of Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT
Pursuant to 37 CFR 1.56

1. Applicants submit herewith patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR 1.56.

The filing of this Information Disclosure Statement (IDS) shall not be construed as a representation that a search has been made (37 CFR 1.56(g)), an admission that the information cited is, or is considered to be material to patentability or that no other material information exists.

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Screen Cathode Preparation
Inventor: Gan et al.

The filing of this IDS shall not be construed as an admission against interest in any manner (Notice of Jan. 9, 1992, 1135 O.G. 13-25, at 25).

2. Attached is Form PTO-1449. Legible copies of all items listed accompany this IDS.

3. A concise explanation of the possible relevance of the listed information items is as follows:

Patents:

U.S. Patent 5,545,497 to Takeuchi et al. relates to a cathode material, such as SVO, provided in granular or powdered form and formed into a cathode body with or without binder material. The cathode matrix material may be prepared by rolling, spreading or pressing a mixture of the materials onto a suitable current collector.

U.S. Patent 5,435,874 to Takeuchi et al. teaches a method for making cathode components by a pressing process. The process begins by taking granular cathode active starting material and rendering it to reduce the particle size. The ground cathode material is mixed with conductive diluents and a suitable binder material and suspended in a solvent to form an admixture of a paste consistency. The admixture is then fed

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into rollers to form briquettes, and the briquettes are fed to rolling mills to produce the cathode material in sheet form. Cathode current collectors may be laminated between at least one cathode blank pressed on either side of the current collector without the use of adhesives.

U.S. Patent 5,543,249 to Takeuchi et al. teaches a method for manufacturing electrode materials from a paste comprising active materials mixed with a solvent system of deionized water and a surfactant. The paste is layered onto both sides of an expended metal screen. This assembly is then fed into a series of roll mills which calendar the active material into thin sheets on the opposed sides of the intermediate screen. Thereafter, the laminated electrode is heated to a sintering temperature.

U.S. Patent 5,571,640 to Takeuchi et al. relates to a process for making a cathode similar to that described in the above discussed U.S. Patent 5,435,874 to Takeuchi et al. In particular, the particle size of granular active material is reduced by a comminuting step. The ground active material is mixed with suitable binders and conductive additives, and suspended in a solvent to form a paste. The paste can be first pelletized or simply fed into rolling mills to form sheets of the cathode active material. The cathode material is dried and then punched into cathode plates. A cathode is prepared by

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material.

U.S. Patent 5,614,331 to Takeuchi et al. teaches a cathode prepared from an active material in dry powder form pressed onto a conductive metal screen. The preferred method states that the active material is pressed onto the current collector screen with the aid of a suitable binder material, such as PTFE, and at least one material having electronic conductive properties, such as graphite powder, acetylene black powder and/or carbon black power.

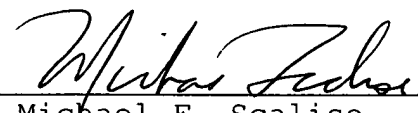
U.S. Patent 5,981,105 to Smith et al. discloses a metal oxide electrode comprising silver(I) oxide powder by itself, with no additives and small amounts of binder. The active powder is mixed with PTFE binder material, shaken, filtered and dried., and then sieved to break up agglomerated clumps. The dry powder mix is then spread over a piece of expanded silver current collector. Coagulated binder dissolved in mineral spirits may also be used, in which case, the mixture is spread while wet onto the current collector before drying.

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4. The person making this statement is the agent who signs below, who makes this statement on the information supplied by the inventors and the information in the agent's file.

Respectfully Submitted,

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